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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,650

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EXAMINER

YOON, TAE H

ART UNIT

PAPER NUMBER

1796

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/561,650	<b>Applicant(s)</b> MAYSTON ET AL.	
	<b>Examiner</b> Tae H. Yoon	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 37-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 37-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/20/05</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 37-71 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Improper Markush language is recited in claims 1 ("group comprising" rather than "group consisting of"), see the proper format recited in claim 43.

Regarding claim 48, the phrase "(or the) like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "(or the) like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). Also, the recited flake and leaf(-like)" in claim 48 would improperly broadens scope of powder since said flake and leaf(-like) would not be a powder to one skilled in the art.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 37-40, 43-54, 56, 58, 60-62, 65 and 68-71 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oohira et al (US 2003/0022797 A1).

Oohira et al teach a slide bearing comprising a metal base coated with various resins containing silica particles in examples and claims 1, 14 and 15. For example, example 19 shows employing 5 vol.% of silica in two-part epoxy resin and coating of an aluminum pin with a thickness of 30  $\mu\text{m}$ . Also, use of 5-20 vol % of silica is taught in pp [0073] and use of 10 vol % of PTFE is seen in many examples. The instant resins such as polyamideimide resin, epoxy resin, phenol resin, vinyl ester resin or mixture of two or more are taught in pp [0059]. Thus, use of polyamideimide in said examples would be anticipation and the modified epoxy resin, metal powder and ceramic powder are optional in above various claims when combined with claim 1.. Silica with the surface – OH group is taught in pp [0067].

With respect to claims 68 and 71, an invention in a product-by-process is a product, not a process. See **In re Brown**, 459 F2d 531, 173 USPQ 685 (CCPA 1972) and **In re Thorpe**, 777 F2d 695, 697, 227 USPQ 964 (Fed. Cir. 1985).

Thus, the invention lacks novelty.

Claims 1, 37-56, 58-62 and 65-71 are rejected under 35 U.S.C. 103(a) as obvious over Oohira et al (US 2003/0022797 A1).

The instant invention further recites modified epoxy, a majority amount of polyimide in the polyamideimide and a bearing comprising copper alloy over Oohira et al. However, Oohira et al teach employing a mixture of resins in pp [0059] and a copper alloy base in pp [0097]. Claim 59 would be optional when the additive is PTFE.

Thus, it would have been obvious to one skilled in the art at the time of invention to utilize a vinyl ester resin in said example 9 since both epoxy resin and vinyl ester resin are used in examples and since Oohira et al teach employing a mixture of resins and to further to employ a majority amount of polyimide in the polyamideimide since said polyimide is known thermosetting resin which would provide superior mechanical properties and further to utilize a copper alloy as a base for a bearing since Oohira et al teach metallic substrate coated with a sliding material and copper alloy as a base in the art absent showing otherwise.

Claims 1, 37-56, 58-63 and 65-71 are rejected under 35 U.S.C. 103(a) as obvious over Oohira et al (US 2003/0022797 A1) in view of Ray (US 4,497,764).

Claim 40 recites a mixture of two epoxy resins over Oohira et al even though said two epoxy resins would be optional when polyamideimide is used in Oohira et al as pointed out above. Claim 63 further recite a silane coupling agent.

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Ray teaches use of two epoxy resins in thermosetting composition in example 1 having workable viscosity since one of said two epoxy resins would be acting as a diluent and aminosilane treated silica in table 1.

Thus, it would have been obvious to one skilled in the art at the time of invention to further utilize a mixture of epoxy resins and the art well known silane coupling agent of Ray in Oohira et al in order to improve processing and compatibility of a matrix resin and filler such as silica since one of said two epoxy resins would be acting as a diluent absent showing otherwise.

Claims 1, 37-56 and 58-71 are rejected under 35 U.S.C. 103(a) as obvious over Oohira et al (US 2003/0022797 A1) in view of Tokunaga et al (US 5,985,455).

The instant invention further recites employing silane coupling agents over Oohira et al. However, utilization of said silane coupling in order to improve compatibility of a matrix resin and filler such as silica is well known in the art as taught by Tokunaga et al who teach various silane coupling agents at col. 5, lines 10-12 and 19-20.

Thus, it would have been obvious to one skilled in the art at the time of invention to further utilize the art well known silane coupling agent of Tokunaga et al in Oohira et al in order to improve compatibility of a matrix resin and filler such as silica absent showing otherwise.

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Claims 1, 37-56, 58-62 and 65-71 are rejected under 35 U.S.C. 103(a) as obvious over Oohira et al (US 2003/0022797 A1) in view of Araki et al (US 6,726,994).

The instant invention further recites aluminum alloy over Oohira et al.

Metallic substrates for bearings such metal and aluminum alloy is well known as taught by Araki et al, col. 4, line 54 to col. 5, line 10.

Thus, it would have been obvious to one skilled in the art at the time of invention to utilize aluminum alloy of Araki et al in Oohira et al as a base for the bearing since various metallic substrates for bearings are well known in the art absent showing otherwise.

Claims 1, 37-40, 43-54, 56, 59-61, 65 and 68-71 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over DE 2917856.

DE teaches a plain bearing comprising a metal bearing coated with a coating composition comprising a polyimide-polyamide and a solid lubricant such as graphite, sulfide or powdered PTFE in a thickness of 5 to 50  $\mu\text{m}$  in English abstract and examples 1 and 2 (Beispiel 1 and 2) of German patent. Said Beispiel 2 shows 1% vol. of PTFE in polyimide-polyamide. Various limitations of dependent claims are optional when combined with claim 1.

With respect to claims 68, 70 and 71, an invention in a product-by-process is a product, not a process. See **In re Brown**, 459 F2d 531, 173 USPQ 685 (CCPA 1972) and **In re Thorpe**, 777 F2d 695, 697, 227 USPQ 964 (Fed. Cir. 1985).

Thus, the invention lacks novelty.

Claims 1, 37-41, 43-62 and 65-71 are rejected under 35 U.S.C. 103(a) as obvious over DE 2917856 in view of Araki et al (US 6,726,994).

The instant invention further recites a majority amount of polyimide in the polyamideimide, different fillers and amounts thereof and a bearing comprising copper or aluminum alloy over DE.

Metallic substrates for bearings such metal and aluminum alloy is well known as taught by Araki et al, col. 4, line 54 to col. 5, line 10. Also, use of various fillers including the instant metal powders such as aluminum and ceramic powders such as nitrides or carbides in a sliding material of a bearing are taught at col. 14, line 36 to col. 15, line 2 and lines 46-52. Also, amounts of 2 to 50% by volume for the filler is taught at col. 15, line 56 to col. 16, line 3.

Thus, it would have been obvious to one skilled in the art at the time of invention to utilize the instant amounts of metal powders such as aluminum and ceramic powders such as nitrides or carbides and/or copper or aluminum alloy of Araki et al in DE since use of various fillers including the instant metal powders such as aluminum and ceramic powders such as nitrides or carbides in a sliding material of a bearing and of various metallic substrates for bearings are well known in the art as taught by Araki et al or further to employ a majority amount of polyimide in the polyamideimide since said polyimide is known thermosetting resin which would provide superior mechanical properties absent showing otherwise.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H. Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tae H Yoon/  
Primary Examiner  
Art Unit 1796

THY/July 6, 2009